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trichia Fr. Braun from the Mesozoic of Franconia is introduced. The result of the present important communication is to enlarge our knowledge of the male organs of the Bennettiales by seven different species belonging to five different types. Two species of *Williamsonia* have monosporangiate strobili. The same condition is clearly demonstrated in *Cycadocephalus*. The author wisely refuses to commit himself as to the nature of the Bennettitean inflorescence, and avoids any reference to its possible homology with the angiospermous flower.—E. C. JEFFREY.

Rôle of ammonium salts.—PRIANISCHNIKOW,¹⁵ working with grasses, has already shown that a substitution in sand cultures of $\frac{1}{4}$ – $\frac{3}{4}$ of the NaNO_3 by $(\text{NH}_4)_2\text{SO}_4$ increases the power of the plant to gain phosphoric acid from raw phosphates (phosphorite), while in absence of $(\text{NH}_4)_2\text{SO}_4$ the plants show phosphoric acid starvation. Total substitution, however, greatly reduces the harvest. Both these effects are attributed to the released sulfuric acid. In partial substitution the acid was strong enough to aid in dissolving the phosphorite, and in total substitution so strong that it greatly injured the plants. It is also shown that CaCO_3 is very effective in preventing injuries by $(\text{NH}_4)_2\text{SO}_4$, and if only $\frac{1}{4}$ – $\frac{1}{2}$ enough was used to neutralize the liberated sulfuric acid, the consumption of the phosphorite was also much favored. In working with barley, peas, and buckwheat, the author has determined that mixtures of NaNO_3 and $(\text{NH}_4)_2\text{SO}_4$ are better sources of nitrogen than either one alone, for, as he states, the first is physiologically basic (base liberated due to the consumption of NO_3 as source of nitrogen) and the second physiologically acid (acid liberated due to the consumption of NH_4 as the source of nitrogen). The two maintain the culture medium neutral. The author does not attempt to decide between the relative values of ammonium salts and nitrates as a source of nitrogen when the former are of very weak acids, as those used by RITTER¹⁶ to settle this question for fungi.—WILLIAM CROCKER.

Fossil conifers.—NATHORST¹⁷ has described with truly admirable clearness and judgment the cones of the problematical coniferous genus *Palissya* from the Rhaetic of Schonen in Sweden. The ovuliferous cone scales are characterized by the presence of two rows of opposite seeds, with very loose integuments or epimatia. The author concludes that the evidence of the organization of the cone scales tends to connect the genus with a second genus described in the article, namely *Stachytaxus*. This genus has yewlike foliage, and attached to the ends of the twigs are lax cones with distant scales, each of which bears two ovules, provided with a widely flaring integument or possibly an epimatum comparable with that found in the Taxineae. The author argues for the taxineous affinities

¹⁵ PRIANISCHNIKOW, D., Zur physiologischen Charakteristik der Ammoniumsalze. Ber. Deutsch. Bot. Gesell. **26**: 716–724. 1909.

¹⁶ Ber. Deutsch. Bot. Gesell. **27**: 582–588. 1909.

¹⁷ NATHORST, A. G., Paleobotanische Mitteilungen. 7. Handl. Kgl. Svensk. Vetensk.-Akad. **43**: no. 8. 1909.